

Novitates gabonenses 4¹. Another new species of *Impatiens* (*Balsaminaceae*) from Gabon

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Summary : Description of *Impatiens columbaria* Bos, a new species in the *I. filicornu* Hook. f. aggregate *sensu* GREY-WILSON, on the basis of a 1985 collection from Gabon.

Résumé : Description d'*Impatiens columbaria* Bos, espèce nouvelle appartenant au groupe d'*I. filicornu* Hook. f. *sensu* GREY-WILSON, basé sur un spécimen récolté au Gabon en 1985.

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Two years before the discovery of *Impatiens floretii* Hallé & Louis (HALLÉ & LOUIS, 1989) a joint collecting venture of the herbaria LBV and WAG procured living material of what proved to be yet another new *Impatiens* species. It was discovered near the base of a precipitous flank of an inselberg, approximately at 0°50' N and 11°10' E. Dry season prevailed and the specimens consisted of short fleshy prostrate stems, each provided with a single pubescent leaf, closely hugging the vertical cliff with hardly any soil to root in, in the shade of high forest. In this sterile condition it was initially considered to represent modest specimens of *Acanthonema* (*Gesneriaceae*) and live slips were collected for further cultivation in the conservatory at Wageningen. It was quite a surprise that the resulting plants, conventionally cultivated in pots, developed a more or less erect habit with much larger spirally arranged leaves, eventually producing long inflorescences bearing unmistakable *Impatiens* flowers.

An effort to identify the plants, despite the luxury of both a modern treatment of *Impatiens* for the Flore du Gabon (HALLÉ, 1962) and a recent monograph for Africa (GREY-WILSON, 1980) being available, did not, however, have satisfactory results. According to the key given in the Flore du Gabon one would arrive with some concessions at *Impatiens palpebrata* Hook. f. However, the dense pubescence in all parts except the perfectly glabrous inflorescence proper (i.e. except peduncle), the shape and size of the leaves, the lower sepal, its spur and the lateral petals, are in conflict with the delimitation given there for that species. Using the key in GREY-WILSON's monograph, one arrives without much difficulty in the *Impatiens filicornu* Hook. f. aggregate. Although the present species seems to be well accommodated here, it does not fit the description of any of its eight species, including *I. palpebrata*, admitted by GREY-WILSON.

1. Novitates gabonenses is a series of publications disseminating various botanical observations from Gabon, emanating from the cooperation between the Herbar National du Gabon (LBV) and the Herbarium Vadense (WAG).

Upon consultation, the author himself readily agreed that our plant represents a hitherto unrecognized new species, but somehow an intended joint publication of it never materialized. Although this new species is based on only a single gathering, and all plants cultivated today are vegetatively derived from the same collection, I do not hesitate to propose it as such. Its unique combination of clear-cut characters fully justifies its recognition at the specific level among the related taxa accepted at present. Postponement until additional material becomes available may have unfavourable consequences as its particular characters render it a plant of interesting horticultural potential, and as such it is urgently in need of a name.

As the number of epithets that has already been proposed in *Impatiens* is quite impressive, I was rather pleased that an appropriate epithet is still available. The playful resemblance of the flower as seen in profile, to a graceful pigeon alighting has led me to coin *Impatiens columbaria*. The accompanying photograph (Fig. 1) showing the flower in its natural position provides a rather unusual profile that does not match any illustration in GREY-WILSON's monograph.



Fig. 1. — *Impatiens columbaria* Bos, flower in profile.

***Impatiens columbaria* Bos, sp. nov.** — Fig. 1, 2.

Herba foliis cordatis pubescentibus, fimbriis longissimis ornatis. Racemus elongatus multiflorus. Flores purpurei, a latere columbulum volantes simulant, calcaribus parte distale abrupte constrictis.

TYPE : Culta WAG, Laan 985 (holo-, WAG ; iso-, BR, K, LBV, P, YA) acc. 85PTGA 227 ex Bos, v.d. Laan & Nzaby 10562, July 1985, Gabon, 30 km E of chantier Abanga Leroy Gabon, 0°50' N-11°10' E, near the base of vertical flank of an inselberg in high forest.

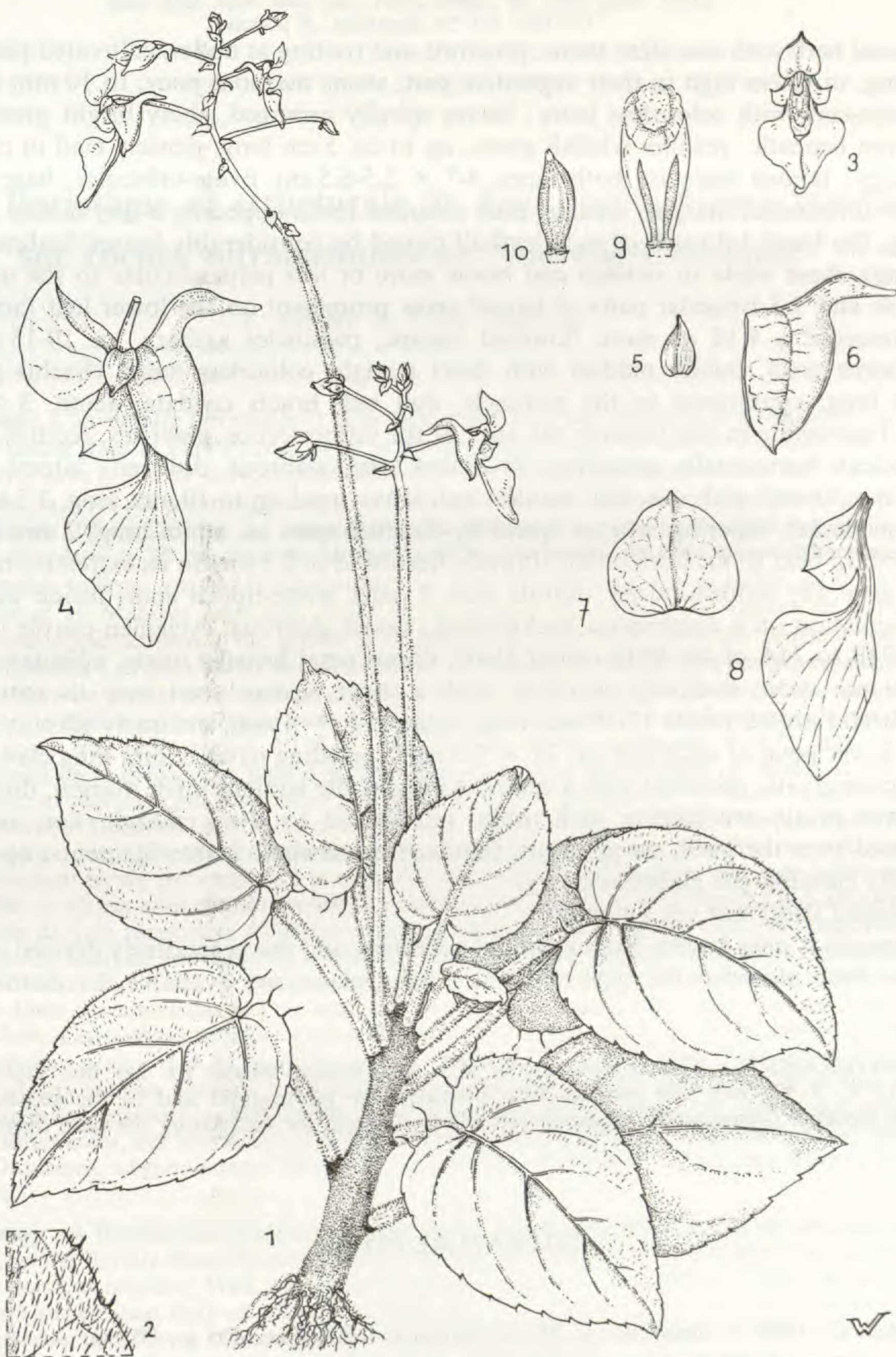


Fig. 2. — *Impatiens columbaria* Bos : 1, habit $\times 2/3$; 2, leaf detail, edge upper surface $\times 2$; 3, flower, frontal $\times 2/3$; 4, flower, lateral $\times 2$; 5, lateral sepal $\times 2$; 6, spurred lower sepal $\times 2$; 7, dorsal petal $\times 2$; 8, lateral petal $\times 2$; 9, androecium $\times 4$; 10, pistil $\times 4$. *Laan 985* and living plants 85PTGA227 (Del. W. WESSEL-BRAND).

Perennial herb with succulent stems, prostrate and rooting at nodes, cultivated plants erect or ascending, to 25 cm high in their vegetative part, stems maroon, juicy, to 10 mm in diam., densely pubescent with colourless hairs; leaves spirally arranged, shiny bright green above, whitish green beneath; petioles whitish green, up to ca. 5 cm long, densely clad in colourless straight hairs; lamina hairy on both faces, $4-7 \times 2.5-6.5$ cm, ovate-orbicular, base cordate, apex acute to rounded, margins crenate, each rounded tooth tipped by a tiny mucro less than 1 mm long, the basal 1-3 teeth of each leaf half tipped by considerably longer fimbriae (up to 10 mm long), these white to reddish and borne more or less perpendicular to the upper leaf face, midrib and 3-5 irregular pairs of lateral veins prominent on the lower leaf face.

Inflorescence a 4-10 or more flowered raceme, peduncles axillary, ca. 10-15 cm long, straight, borne erect, faintly reddish with short straight colourless hairs, rhachis glabrous, ca. 6-7 cm long, continuous to the peduncle, dull red, bracts cordate, acute, 3×2 mm, gradually diminishing in size towards the apex of the inflorescence, glabrous, reddish, margins entire; pedicels horizontally spreading, 18-20 mm long, glabrous, dull red; lateral sepals 2, 3.5×2.5 mm, ovoid, glabrous, dull maroon red, lower sepal up to 10 mm long, 7.5 mm deep, obliquely navicular, tapering into an upwardly-directed spur, ca. 6 mm long, 2 mm in diam., the recurved tip bent to the horizontal, abruptly narrowed to 0.5 mm in its extreme 2 mm, quite glabrous, generally reddish-purple outside with a paler white-tipped spur, inside with a fine purple reticulation on a diaphanous background; petals glabrous, cyclamen-purple in colour, matching 74B to 74A of the RHS colour chart, dorsal petal broadly ovate, apiculate, 7-8 mm long, ca. 9 mm wide, shallowly cucullate, with a short median crest over its entire length dorsally, lateral united petals 17-19 mm long, upper $5-6 \times 4$ mm, obliquely elliptic, minutely apiculate, lower petal of each pair ca. 13×7.5 mm, including its ca. 2 mm long claw, oblong, obliquely emarginate, provided with a central tooth on the straight inner margin, distal halves of the lower petals overlapping each other, interlocked by their emargination and teeth; anthers fused over the pistil, on glabrous, flattened, somewhat clavate filaments, up to 4 mm long, tightly clasping the glabrous ovary.

Developed fruits not yet known.

The species is only known from its initial collection and the vegetatively derived cultivated plants that have provided the type material. Living plants are available for distribution at WAG.

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Etude floristique et structurale de deux forêts denses humides sur roches ultrabasiques en Nouvelle-Calédonie

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Résumé : L'inventaire floristique et structural d'une forêt sur alluvions et d'une forêt sur pentes a été réalisé dans le Parc Provincial de la Rivière Bleue située sur roches ultrabasiques (terrains miniers) dans le sud de la Nouvelle-Calédonie. Avec 209 espèces recensées sur 0,25 ha et 309 sur 2,79 ha, la forêt sur pentes apparaît plus riche que celle sur alluvions qui compte 138 espèces sur 0,25 ha et 219 sur 2,68 ha. La comparaison du nombre d'espèces représentées par des individus d'un diamètre ≥ 10 cm trouvés sur une surface de l'ordre de 1 ha, pour différentes forêts tropicales, indique que les forêts étudiées ici sont sensiblement moins riches qu'en Nouvelle-Guinée et en Malaisie mais plus riches qu'en Afrique de l'Ouest. Les espèces de la forêt sur alluvions appartiennent à 142 genres et 67 familles et celles de la forêt sur pentes à 166 genres et 70 familles. Les deux forêts ont en commun 178 espèces. L'importance des principales familles en nombre de genres et d'espèces, est donnée pour les 2 catégories de forêts. Au niveau de la famille, la différence principale entre les deux forêts réside dans la prédominance sur pentes des Myrtacées qui représentent 10,36 % des espèces contre seulement 3,65 % sur alluvions. L'examen de la densité des tiges d'un dbh ≥ 2 cm montre que la forêt sur pentes se différencie de celle sur alluvions par un nombre plus élevé de tiges d'un diamètre ≤ 30 cm ; les valeurs étant sensiblement égales ou inférieures pour les classes de diamètres ≥ 30 cm. Dans les forêts étudiées la densité des tiges d'un diamètre ≥ 10 cm (1533 sur pentes et 1183 sur alluvions) est relativement élevée par rapport à la moyenne pantropicale. Par contre, elle reste inférieure pour un dbh ≥ 60 cm avec respectivement 7,7 tiges/ha sur pentes et 15,7 tiges/ha sur alluvions. Les densités de tiges rapportées à l'hectare sont calculées par famille et par espèce et l'importance des espèces est analysée par classe de diamètres. Il ressort que le nombre des espèces représentées par des individus d'un diamètre compris entre 2 et 10 cm est beaucoup plus grand en forêt sur pentes qu'en forêt sur alluvions où l'on note une forte prédominance d'un petit nombre d'espèces du sous-bois. Les surfaces terrières qui s'établissent pour les diamètres ≥ 10 cm à 49,54 m²/ha pour la forêt sur pentes et à 47,01 m²/ha pour la forêt sur alluvions sont relativement élevées par rapport aux valeurs données pour différentes forêts tropicales. L'examen de la surface terrière par taxon fait ressortir la prédominance des Sapotacées dans les deux cas, suivies des Araliacées, des Cunoniacées, des Myrtacées, des Sapindacées et des Légumineuses dans la forêt sur alluvions, des Guttifères, Légumineuses, Palmiers, Cunoniacées, Icacinacées, Myrtacées dans la forêt sur pentes.

Summary : A floristic and structural inventory has been made of the forest on alluvium and on slopes in the Rivière Bleue Provincial Park situated in the South of New Caledonia on ultrabasic rocks (terrains miniers). With 209 species recorded on 0.25 ha and 309 on 2.79 ha the slope forest appears richer than that on alluvium which has 138 species on 0.25 ha and 219 on 2.68 ha. Comparison in different tropical forests of the number of species represented by individuals with a diameter of 10 cm or more on a surface of the order of 1 ha shows that the forests studied here are distinctly less rich than in New Guinea or Malesia but richer than in West Africa. The species of the forest on alluvium belong to 142 genera and 67 families and those of slope forest to 166